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ABSTRACT

The New Jersey State Department of Education adopted the High School Proficiency Test (HSPT) as a high school graduation requirement beginning with the ninth grade class of 1985-86. This document is a tool to support educators in making the necessary curriculum modifications to improve basic skill mastery and student achievement on the HSPT. It shows how to use the HSPT data to form successful instructional/curricular changes. Curriculum design and delivery problems are discussed. The following procedures are recommended for dealing with possible design problems: (1) focus on the low HSPT scores missed by most learners, (2) locate the test content in the curriculum content, (3) place the analysis in a usable format, (4) monitor the implementation of the alignment, (5) organize staff development workshops, and (6) implement instructional strategies. Curriculum mapping, a record keeping system to assess teaching content, should be used after design problems have been resolved to deal with delivery problems (problems when a teacher does not teach something that was supposed to be taught). The following are recommended procedures for curriculum mapping: (1) examine the HSPT for continuing low pupil scores; (2) determine where curriculum content should be taught; (3) develop curriculum maps; (4) indicate topics and time teachers spent; (5) analyze the mapping data; (6) formulate instructional interventions; (7) make instructional interventions; and (8) evaluate instructional interventions. (JAZ)

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Getting the Most from the New Jersey HSPT

A Practical Guide to Resolving Curriculum Design and Delivery Problems

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GETTING THE MOST FROM THE NEW JERSEY HSPT

A PRACTICAL GUIDE TO RESOLVING CURRICULUM DESIGN AND DELIVERY PROBLEMS

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COMMISSIONER'S FOREWORD

Recent educational reform efforts in our state and in the nation have been targeted to ensuring that our students are equipped with the skills they need to function adequately in our increasingly complex and technological society. In 1983, the New Jersey State Department of Education decided to adopt the High School Proficiency Test as a high school graduation requirement beginning with the ninth grade class of 1985-86. This test requires educators to raise academic standards for all public school students in our state.

Through formal and informal interactions with local districts, the department has noted the need for curriculum changes to ensure that students are taught the skills that the HSPT tests. Local districts need a system for managing these changes to align and deliver a curriculum that will prepare students adequately. In our efforts to help districts meet their needs in this area, we sought the best and most qualified people, ideas and materials. This guide, developed by Dr. Fenwick English, outlines sound and proven strategies for finding and solving curriculum design and delivery problems. The materials and processes contained in this publication were successfully field-tested with more than 100 New Jersey educators through training sessions at the Regional Curriculum Service Units.

The guide is a supplement to the training the department provides on curriculum alignment and mapping but can also serve as an introduction to curriculum alignment and mapping for school personnel who have not participated in the training sessions. Commitment to solving curriculum design and delivery problems will lead to much hard work for school personnel but it will result in providing our students with maximum opportunities for academic success.

Saul Cooperman
Commissioner

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Sincere thanks are expressed to the professionals who cooperated in the development and preparation of this manual. Particular acknowledgment is extended to Dr. Fenwick English, professor of education, Lehigh University, who served as a consultant on this project and was responsible for developing the content of this document.

Dr. English has worked extensively on the national level as a consultant, speaker and author. This outline of the strategies he recommended in a training series for New Jersey school personnel will serve as an introduction or supplement to the training he provided under the sponsorship of the Division of General Academic Education.

Special thanks are extended to Dr. Joel Bloom, Assistant Commissioner of the Division of General Academic Education and Stephen Koffler, Manager of the Bureau of Academic Cognitive Skills, for their review and comments; to Diane Braungart and Barbara Nuding, who oriented Dr. English to New Jersey's statewide testing system; to Florence Cucchi for editing the manuscript; and to the staff of the department's Word Processing Center who prepared the various drafts.

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. GETTING THE MOST FROM HSPT DATA	2
Using HSPT Feedback Intelligently	3
Four Basic Questions on Quality Control Breakdowns and HSPT Data	3
III. CURRICULUM DESIGN AND DELIVERY PROBLEMS	5
IV. CURRICULUM ALIGNMENT FOR DESIGN PROBLEMS	7
Focusing on the Low HSPT Scores Missed by Most Learners	7
Locating the Test Content in the Curriculum Content	8
Placing the Analysis in a Usable Format	9
Monitoring the Implementation of the Alignment	10
Organizing Staff Development Workshops	10
Implementing Instructional Strategies	11
V. CURRICULUM MAPPING FOR DELIVERY PROBLEMS	11
Examining the HSPT for Continuing Low Pupil Scores	12
Determining Where Curriculum Content Should Be Taught	13
Developing Curriculum Maps	13
Teachers Indicating Topics and Time Spent	15
Analyzing the Mapping Data	15
Formulating Instructional Interventions	16
Making Instructional Interventions	17
Evaluating the Instructional Interventions	18
VI. ALIGNMENT AND MAPPING: ADDITIONAL CONSIDERATIONS	19
VII. DEVELOPING LOCAL CURRICULUM	21
VIII. REFERENCE LIST	24

DIAGRAMS AND CHARTS

Quality Control Model	3
Sample Curriculum Map (Exhibit #1)	14
Basic Curriculum Activities Charts	22

I. INTRODUCTION

This document is a tool to support New Jersey school leaders' curriculum intervention to improve basic skills mastery and pupil achievement on the High School Proficiency Test (HSPT). It shows how to avoid a curriculum management breakdown by making better use of the annual test results supplied to the school leaders by the New Jersey State Department of Education. Using the data does not necessarily require a sophisticated knowledge of curriculum or statistics, but it is essential if districts wish to avoid curriculum management breakdowns. A curriculum management breakdown occurs when districts fail to align or make congruent three crucial functions: 1) teaching 2) pupil learning objectives and 3) testing/assessment. The process of managing the desired congruence among these elements is called quality control. Managing the congruency of these elements or controlling for quality will conserve time and increase what is learned in classrooms and school systems.

This publication has been designed to show educators how to use the HSPT data to form successful instructional/curricular changes. Step-by-step procedures are outlined to resolve curriculum design and delivery problems in classrooms and schools. This guide, and additional materials provided through the regional curriculum services units (RCSUs) training can help districts align their curriculum to the HSPT. For more detailed information and detail on curriculum alignment, readers are encouraged to peruse the materials referenced at the end of this guide and avail themselves of the training on curriculum alignment provided through the RCSUs.

II. GETTING THE MOST FROM THE HSPT DATA

Getting the most from the HSPT requires using the information the test provides, and making intelligent decisions and interventions in the educational program to improve pupil learning. It is a step-by-step procedure, and, although there is nothing mysterious about it, it requires attention to detail and follow-through.

The HSPT is an achievement test, designed to measure the skills, knowledges, and operations students should learn in school. It is, therefore, a school-related measure more than the many other kinds of instruments which may be used in New Jersey schools. Of course, no testing instrument, including the HSPT, is free from what the student brings or does not bring to school and the learning situation itself. Yet, as the effective schools research shows, to the largest extent student achievement is affected by what educators do in schools.

School districts with educational leaders who desire to increase student basic skills mastery and get the most from the HSPT should begin by asking themselves the following questions:

- What can we do to improve our students' mastery of the basic skills measured by the HSPT?

- What specific actions on our part will result in the largest gain in mastery by our students?

- How long will it take to generate sustained improvement?

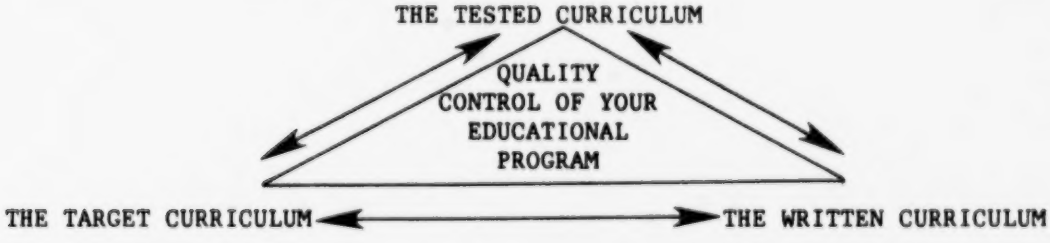
- What interventions in our system will resolve the problems that now prevent us from maximizing our resources to improve pupil learning and performance of the HSPT skills?

Using HSPT Feedback Intelligently

Using the HSPT data intelligently requires linking the test information to the actions that educators, administrators and teachers can take as part of their normal duties.

We refer to the use of the HSPT data in relation to curriculum design and delivery as a means of quality control. Quality control refers to managing three distinct and interdependent activities or functions. In some measure this control should be exercised in classrooms, schools and the district as a whole.

Controlling for quality will assure a link between the actions of teachers and the written curriculum, and a link between both of these elements and the assessment instrument. Quality control refers to the alignment of the written, taught and tested curriculum of a school system. See the illustration below.



The HSPT should be a measure for the written curriculum. The test was designed to include the necessary basic skills in which all high school students, specifically those in grade nine, should be able to demonstrate proficiency prior to graduation. As such, it represents a consensus about certain instructional/curricular results.

The HSPT data may be used in two separate ways by a school system. The first is preventative. Here the administrator will want to use the feedback from the HSPT to correct deficiencies in the K-9 educational program to remove causes of poor achievement due to breakdowns in the school system's management of education.

The second use of the HSPT data is remedial. Here the administrator will want to use the data to create alternative remedial programs for grades 10-12 to enable all students to ultimately pass the exam in order to receive a diploma.

Four Basic Questions that Control for Quality

These four basic questions are critical to using HSPT data to correct system problems or quality control breakdowns:

(1) Do we teach what we test?

(2) Do we teach the way we test?

(3) Do we teach before we test?

(4) Do we teach enough to ensure a good response on the test?

The first question - do we teach what we test - concerns matching the curriculum content to the test content. For example, if we test a student's knowledge and skills to change a mixed number to an improper fraction, the curriculum should prescribe that that same procedure and knowledge be taught.

The second question - do we teach the way we test - concerns the method of presentation. There should be a match between the way the test will assess knowledge, content or operations and the way the item or operation has been taught to students.

The third question - do we teach it before the test - concerns time and sequence, i.e., making sure that there is enough time to adequately prepare students prior to testing. Once a test date is fixed, educators should work backwards from that date to ensure instruction has occurred before the test.

The fourth question - do we teach enough - relates to mastery. Enough time must be spent to ensure that all pupils know the test material well enough to respond appropriately. This may require a flexible use of instructional time in schools.

III. CURRICULUM DESIGN AND DELIVERY PROBLEMS - DEFINITIONS AND DIFFERENCES

Using the HSPT data requires knowledge of a diagnostic procedure to prevent potential problems in a school district that can cause a breakdown in quality control. There are two basic types of breakdowns.

The first breakdown is a curriculum design problem. A design problem occurs when the material the district puts into the hands of the teachers for preparing the students is not aligned with the test content. Thus, teachers teach one thing and the test assesses something else. This incompatibility is far more common than assumed. It is often caused by ambiguous educational objectives, lack of care in adopting textbooks, and supervisory approaches that fail to predetermine the match between teacher objectives and test content.

A curriculum delivery problem, on the other hand, occurs when the teacher does not teach what has been adopted for, or by, him/her to teach. While the text or curriculum guide may be aligned to learner objectives and to the test, if it is not properly used by the teacher, some other curriculum is taught instead of the one needed. In either case, the result is virtually the same for the student, i.e., he/she has to master skills and take a test for which he/she was not adequately prepared. The last thing that we should do for pupils is to surprise them with a test which assesses that which they were not taught. Given the consequences of the test for the students, no one should want to surprise them, particularly when the curriculum content is considered so basic to functioning in our society.

Administrators must know how to eliminate both design and delivery problems in order to ensure the mastery of basic skills by all students. These problems are caused by breakdowns in the school system and not because pupils did not learn that which was taught in the schools.

Different students will attain different results on an achievement test like the HSPT because they have learned or not learned what the test measures. The test should be a measure of that learning. If, however, the failure to learn has been caused by poor educational management, then we are not measuring pupil progress at all. It would be like blaming the patient for the doctor's mistake.

School leaders should follow a step by step procedure to analyze where poor pupil achievement may have been caused by system breakdowns. Those procedures which relate to design problems can be resolved with curriculum alignment. Those procedures which relate to delivery problems can be resolved with several strategies including curriculum mapping and staff development.

IV. CURRICULUM ALIGNMENT FOR DESIGN PROBLEMS

The following procedures are recommended for dealing with possible design problems.

(1) Focus on the Low HSPT Scores Missed by Most Learners

School leaders should review the HSPT test data supplied by the Department of Education to determine: 1) which students performed the lowest on the test and if there were any trends or groups of students among them, and 2) which test items most of the students missed. The concept of the Pareto Principle should apply, i.e., a few errors will account for many or most of the mistakes.

Often there will not be enough time to use all of the data to adjust the design of the curriculum. The administrator will have to focus staff time and energy on the areas missed by the students with the poorest performances on the test. This is simply recognition of the constraints which exist within almost all human situations.

(2) Locate the Test Content in the Curriculum Content

Design problems exist if the test skills missed by many learners were: 1) not properly placed in the curriculum; 2) not taught the way they were tested; and 3) were not taught prior to testing with enough time for mastery to occur.

Determining whether any or all of these omissions have occurred presents a large obstacle for many local educators, since local curriculum is usually in need of improvement. Curriculum guides, if they exist at all, are large and cumbersome and often have not been revised for several years. Without a detailed curriculum guide, the problem of locating test content in the curriculum becomes more difficult. The educator in these cases, however, is still not stymied, since the curriculum surrogate in most school systems, unfortunately, remains the textbook. In many cases, the textbook is the curriculum and it determines not only what but also when something is taught. Districts may examine texts to determine if test content is in the "written curriculum."

In these cases, the local educator must do a match-mis-match analysis to determine where test content is located within specific grade level texts. Rather than spending a lot of time on this, the educator can write to the textbook company requesting a copy of the analysis, which most textbook companies have already done.

The local educator must do several things with this information. First, he/she should verify that the test content is within the text as specified by the publisher. Second, the local educator must carefully note any discrepancies between the text's method of presentation and the method used for assessment. A match at this level is essential. For the HSPT, educators can consult the Department of Education publication, Skill Arrays for the New Statewide Testing System, which was distributed to all school districts in Fall 1983. This publication gives the specific skill areas on the HSPT, the conditions used to construct the test items, and sample items.

(3) Place the Analysis in a Usable Format

The analysis should provide a thoughtful review of the HSPT content/-skill arrays and contain the precise location of and method in which each skill is included in the major basal textbooks or "written curriculum." It can be published separately, included in a curriculum guide, or become part of a faculty handbook or other publication. The discrepancies noted through the analysis should

become part of recommended actions for teachers to ensure that the content and method in the curriculum or surrogate match that of the HSPT.

(4) Monitor the Implementation of the Alignment

Once the analysis has been developed, school supervisors and principals should monitor its implementation.

(5) Organize Staff Development Workshops

At this point it may become apparent that one of the reasons something is not being taught as it needs to be is that teachers do not know what it is or how to do it. As basic skills learning evolves to include higher levels of achievement in communication, computation, comprehension, critical thinking, and problem-solving skills, it may be necessary to train and re-train teachers in content as well as instructional processes. In this phase, curriculum development, staff development and supervision are the major issues and they will require both longand short-term strategies for improvement. Immediate assistance and training can occur in areas of weakness, and focus particularly on the tested skills and instructional strategies for these skill areas. Longer term strategies could focus on alternative learning and teaching styles, student monitoring and assessment methods, and subject area content.

The longer term strategies usually require on-going staff development, including pre-implementation training, practice, implementation coaching and feedback.

(6) Implement Instructional Strategies

Time must pass before the instructional strategies implemented in the alignment process can be assessed. Upon the second year testing with the HSPT, there will be feedback in the HSPT data to show how well the actions or interventions of the supervisors/principals reduced student errors in the test and improved overall pupil achievement.

The progress of improved achievement should be incremental. Step-by-step, achievement can be gradually improved in selected areas. And while improvement will not always occur across the board, it should occur in areas where specific attention has been focused on alignment.

V. CURRICULUM MAPPING FOR DELIVERY PROBLEMS

Curriculum mapping is a limited but useful tool to deal with delivery problems. It should be used only after a district has resolved design problems it may have found during the alignment process.

For example, if teachers say they did not teach something because they did not know it was supposed to be taught, a design problem (not a

delivery problem) exists. However, if the material given to the teachers was congruent with the test content but simply wasn't taught, a delivery problem needs to be resolved.

In many school districts design and delivery problems occur simultaneously. In these cases, the material given to the teachers by the district was not only incongruent with the test content, but it wasn't used by the teachers either. If this is the case, the design problem must be resolved first; then, work on the delivery problem can ensue. For the delivery problem, curriculum mapping can be a solution.

Curriculum mapping is a record-keeping system to assess teaching content, time spent on that content, and in some cases the actual sequence of content presentation by the teacher. These data often are referred to as time-on-task. In curriculum mapping, however, teacher time is recorded while student time is subsumed under teacher time. Student time is usually a smaller, not larger, amount of time.

The following are recommended procedures for curriculum mapping:

(1) Examine the HSPT for Continuing Low Pupil Scores

Once again, the HSPT printout serves as the starting point for analysis. Items from the printout which reflect continuing low pupil scores should be noted. The printout is helpful in that it matches the test items to specific skills.

(2) Determine Where Curriculum Content Should be Taught

Each specific skill should appear in the curriculum or curriculum surrogate at the designated grade level and in the subject matter content area. For example, the HSPT math skill area #2 indicates that "The student will be able to add and subtract mixed numbers." Where this skill should be taught within the school system must be identified. This point in the program then can be used as the content for a curriculum map.

(3) Develop Curriculum Maps

A curriculum map is actually a content checklist, used where there are continuing low pupil scores to determine how much time was spent teaching specific skills. The data are analyzed to determine not only if the skill was taught but also if enough time was spent teaching it to assure a minimum level of mastery. The following chart shows a simple type of curriculum map for a hypothetical school.

John Adams Middle School

Eighth Grade Mathematics

Time Spent by Teacher (by instructional period = 50 minutes)

HSPT Skill Area	Teacher A	Teacher B	Teacher C	Teacher D	ATS*	Range
1. Conversion of decimals to fractions	3	0	1	5	2.25	5
2. Conversion of decimals to percents	4	0	3	4	2.75	4
3. Conversion of percents to decimals	3	0	2	2	1.75	3
4. Find % of a number	2	5	2	3	3.00	3
5. Find % of one number is of another number	3	4	1	3	2.75	3
6. Find a number when a % of that number is known	3	5	3	4	3.75	2
7. Conversion of percents to fractions	0	0	1	0	.25	1
8. Solve for missing value in a sequence (ratio & proportion)	0	0	0	0	0	0
9. Find number which completes the proportion	0	0	0	0	0	0
10. Identify appropriate place value in a specified number	4	5	2	0	2.75	5
Percentage of ten HSPT skills taught	70%	40%	80%	60%		
Time used to teach HSPT skills total periods =	22	19	15	21		
Percentage of allocated time used (1 month or 20 periods)	110%	95%	75%	105%		

*=average time spent

(4) Indicate Topics and Time Teachers Spent

From the map shown in Exhibit #1, the actual amount of time consumed by each eighth grade teacher at the John Adams Middle School to teach ten HSPT skills over a time period of one month has been recorded. In that period, there were twenty (20) instructional periods allocated (five per week assuming no interruptions or holidays).

(5) Analyze the Mapping Data

From the data shown in Exhibit #1, it can be gleaned that the four eighth grade math teachers at John Adams taught at most only 80% of the curriculum that is aligned with the HSPT. Teacher B taught only 40% of that curriculum. This would indicate a very low alignment for low achieving students. Two HSPT skills (numbers 8 and 9) were not taught at all by any of the four teachers. In short, these data show the scope of the designated curriculum actually taught.

Map records the percentage of allocated time used to teach the designated curricular content. The exhibit shows that two teachers (Teachers A and D) used more time than was allocated. One of these two teachers, however, had the second largest scope of the four.

These two simple calculations indicate how much of the curriculum was taught and how much time was consumed teaching it. How much was actually learned can be known by examining the actual HSPT data in the school district report.

The ATS (average time spent) indicates the actual stress or emphasis placed on the taught curriculum within the time period. The data show that, on the average, the greatest teaching emphasis was given to HSPT skill #6, "Finding a number when a percentage of that number is known," followed by HSPT math skill #4, "Finding the percentage of a number is of another." The range indicates the spread or dispersion of the time spent. The ATS can therefore be less indicative than it appears to be. A large range will often indicate extreme diviations of time spent by teachers and therefore, caution must be used in applying the ATS in such cases.

Thus, the mapping data indicate the teacher(s)' time-on-task and this information can show whether or not enough emphasis has been given to teaching of a specific skill.

(6) Formulate Instructional Interventions

Mapping data will tell you "what", it will not explain the reasons "why." For example, the data in Exhibit #1 show that all four teachers failed to teach HSPT skill #8. The reasons why the teachers failed to teach this skill may vary. Perhaps Teacher A pre-tested her/his students and found they already knew this HSPT skill. Since the teacher was running out of time, she/he did not include it in the classroom curriculum. Teacher B, however, may have chosen not to teach the same HSPT skill because she/he thought it was not important and decided to substitute something else. Teacher C, on the other

hand, may have been struggling with classroom discipline the entire year. The problem here then may have been that poor management crippled the teacher's ability to actually teach the skill. Teacher D may have gotten off to a slow start, spending most of the time on HSPT skill areas #1 and #2. With time running out, this teacher may have simply abandoned HSPT skills #7 through #10.

In each case, the principal or supervisor must know the reasons why the skills were not taught, and work with the staff to improve pupil performance. Through such cooperative interventions teachers can be expected to adjust or change: (1) what is taught, (2) how much time is spent teaching it, (3) the method or approach used in teaching designated content and (4) the sequence of what is taught. Mapping data provides a basic framework for examining these four areas. A "match" in these four areas is the heart of resolving curriculum delivery problems.

(7) Make Instructional Interventions

After the curriculum map analysis, teachers must change their instruction as required. Mapping data may indicate that too much was expected within a period of time. For example, Exhibit #1 shows that two teachers exceeded the time allotted for instruction in 10 HSPT skills. Even though they used additional time, they were still only able to teach 60 to 70 percent of the curriculum. Such information may indicate that more time is needed for that portion of the

curriculum. It definitely indicates a need for a review of the entire expected sequence in the curriculum, which may eventually take the intervention into the lower grades. Expansion of the intervention is to be expected.

Data supplied by curriculum mapping may well reveal that some HSPT skills can be learned in shorter time periods than expected. If this is the case, a "curriculum slack," i.e., spaces or gaps in the curriculum, may occur. These gaps may be used to increase student mastery in other areas of the curriculum.

Because curriculum or curriculum surrogates (textbooks) are rarely pre-tested in actual classrooms with real students and teachers prior to publication, much of the content set out in them is a "best guess" estimate. As such, there is nothing sacred about them and adjustments in the entire sequence of activities as they relate to specified achievement levels may be not only desirable but necessary.

Curriculum mapping is a means of adjusting or "fine tuning" what is to be taught and learned within specified time periods within the school year.

(8) Evaluate the Instructional Interventions

The real determining factor in knowing whether or not an instructional intervention has been successful is the gain by students on

the HSPT itself. Improved student performance is the ultimate criterion for judging whether or not delivery changes within classrooms were successful. After several iterations of a specific change in delivery improved student achievement is a reasonable expectation, assuming no significant design problems exist in the instructional system.

If sequence of content emerges an important factor in instructional/ curricular adjustments, mapping should occur more frequently to adjust the order in which specified content/skills were taught. Mapping may occur at the end of each week or daily if necessary. The recorded data will indicate the serial nature of teaching.

VI. ALIGNMENT AND MAPPING: ADDITIONAL CONSIDERATIONS

As has been mentioned before, use of alignment and mapping will vary at each level of the school system. For the elementary grades, K-6, the data can be used to prevent breakdowns which impede teaching for maximum impact upon learning from occurring. Whereas in grades 10-12, measures will be sought to assist those learners who have not demonstrated proficiency on the HSPT. The Individual Student Improvement Plan (ISIP), required from grade 6 and on for students performing below minimum levels of proficiency, is a link between classroom instruction and student assessment. The measures to improve student learning can include increased opportunity (time to learn), improved resources (instructional materials), and increased academic motivation (involvement of the home).

Remediation at the secondary level is more complex than at the elementary due to departmentalization and course electives. Finding time to help students under such circumstances becomes increasingly more difficult because secondary faculty have less time in the curriculum areas assessed in the HSPT.

The secondary school will be faced with the necessity of making structural/scheduling adjustments, as well as instructional changes. Changes may take the form of reducing elective offerings for some students or extending the school day to increase their engaged time on HSPT skills. Whatever the strategy, increasing time-on-task will be required for secondary school pupils who have had difficulty in passing the HSPT.

As elementary (K-8) systems become more sophisticated in their quality controls and achieve better design and delivery congruence, fewer students can be expected to fail the HSPT. Although, there will always be some margin of failure because school systems cannot control all of the variables that affect pupil learning, we can reasonably expect to do better than we have in the past. This optimism is supported both by the effective schools research findings and our growing awareness of how to be better organized in our curriculum design and delivery in New Jersey schools.

VII. DEVELOPING LOCAL CURRICULUM

A quality local curriculum which is congruent with the state mandates and the HSPT is necessary for successful results. Ideally, the textbooks districts select should reflect rather than substitute for a local curriculum.

In the past, the development of local curriculums has taken too long and the curricula have not been in a usable form when completed. It is strongly suggested that local curriculum development efforts aim for their end products to:

- Be in a usable format which is small, preferably pocket-sized, and

- Contain all of the essential elements of quality control outlined in this publication.

The following charts illustrate a sample sequence of curriculum development activities. This sequence shows (1) what the local district support staff does and (2) what the teaching staff involved in curriculum development does. A third column indicates the type of problem alleviated by each of the activities.

BASIC CURRICULUM ACTIVITIES

WHAT SUPPORT STAFF DOES	WHAT TEACHING STAFF DOES IN EACH CURRICULUM STAGE	TYPE OR PROBLEM ALLEVIATED
1) obtain all materials and place in packets 2) develop pre-post test instruments	START UP (Development of entry level skills to write curriculum) (1) read NJDOE booklet, "Getting The Most From The New Jersey HSPT" (2) read Nat. Assc. materials (3) read NJ State guidelines (4) examine relevant text (5) examine relevant tests	• lack of knowledge/skills to write desired curriculum
1) use quality control specifications 2) use *Bloom's* Taxonomy-higher level thinking skills 3) use mastery level time frame guides-pacing guides	CURRICULUM DEVELOPMENT/DESIGN (1) follow design model in writing curriculum (2) complete all facets of model	• eliminate design/delivery problems in developmental stage
1) develop cross check reference sheets with necessary sign-offs where required	VALIDITY CHECK ON CURRICULUM CONTENT (external-internal) (1) reference content to NJ State guidelines where available (2) reference content to Nat. Assc. guidelines where available (3) reference content to adopted textbooks (4) reference content to adopted tests where available (5) reference content to internal policies and consensus	• eliminate problem of lack of match between designated curriculum content and that in the textbook and tests to be utilized
1) develop field testing specifications 2) develop evaluative instruments to secure feedback	FEEDBACK/FIELD TESTING OF CURRICULUM (1) use curriculum as designed (2) make notes on types of problems encountered (3) use evaluation forms to provide feedback	• eliminate problems in faulty design

BASIC CURRICULUM ACTIVITIES (continued)

WHAT SUPPORT STAFF DOES	WHAT STAFF DOES IN EACH CURRICULUM STAGE	TYPES OF PROBLEM ALLEVIATED
1) schedule time for revisions 2) develop data base for revisions with new specs 3) develop quality assurance specs to insure necessary revisions 4) sign-off that revisions adhere to design specs and include required revisions	REVISION/REFINEMENT OF CURRICULUM (1) re-write curriculum based on feedback from staff which include adherence to external referents and design specifications (2) include any revised or new content references required or desired	• eliminates faulty design problems from being implemented system wide • ensures adherence to design specifications • ensures up-to-date content inclusions
1) design any necessary in-service programs required 2) publish materials for all teachers 3) arrange for any training required for principals/supervisors 4) monitor evaluation-quality assurance-establish system for monitoring 5) secure any necessary textbooks or equipment required to implement new curriculum 6) establish dates for next major revisions in area 7) establish data references for conditions of revisions 8) report data to board on systematic basis	FINAL IMPLEMENTATION OF CURRICULUM (1) all teachers use curriculum as designed (2) report progress data when required/desired (3) make adjustments as required/desired to improve achievement as measured	• eliminates design/delivery problems with quality control
1) establish new specs based on feedback	INITIATE NEW REVISION PROCESS (1) continue providing feedback on implementation	• eliminates obsolescence

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